

# BASIC RESPIRATORY PROTECTION

Toxins can enter the body in a number of ways; however one of the quickest routes of entry into the body is through inhalation. Reaction to these toxins can be acute (immediate) or chronic (gradual decline in health). Toxins can fall into the following respiratory hazard classifications:

1. Gas and vapour contaminants
2. Particulate contaminants  
(aerosols including dust, fog, fumes, mist, smoke, and spray)
3. Combination of gas, vapour, and particulate contaminants



## RISK ASSESSMENT

The first step is to determine the nature of the hazard through a risk assessment. This can be achieved by reviewing the material safety data sheets (MSDSs) for chemicals used in the workplace and reviewing processes and other activities that may produce respirable hazards.

Some examples of processes and activities are:

- Welding
- Material off-gassing
- Oxygen deficient environments
- Toxic process gases (chlorine, ammonia)

## RESPIRATORY PROTECTION PROGRAM

It is important for the hazard assessment process and associated controls considered and/or put in place should be thoroughly documented before resorting to respiratory devices. Personal protective equipment is always the last control in the hierarchy of controls.

A comprehensive respiratory protection program should then be developed that discusses all relevant aspects of respiratory protection including:

- Administration
- Knowledge of respiratory hazards
- Assessment of respiratory hazards
- Control of respiratory hazards
- Selection of proper respiratory protection
- Training
- Inspection, maintenance, and repair of equipment
- Medical surveillance
- Fit testing

## RESPIRATORY PROTECTION EQUIPMENT

Selection of an appropriate device must be done in accordance with CSA Standard CAN/CSA-Z-94.4-93, Selection, Use and Care of Respirators. The following is a general guideline for selecting the appropriate Respiratory Protective Devices.

1. Identify the nature of the hazardous operation or process.
2. Identify whether the contaminant is a gas, vapour or particulate.
3. Measure the concentration of contaminant(s).
4. Determine the oxygen level or potential for an oxygen-deficient environment.
5. Find out the proper occupational exposure limit for identified contaminants.
6. Determine if an immediate danger to life (IDLH) atmosphere exists.
7. Determine if there is an existing substance specific standard for the contaminant(s).
8. If the contaminant is vapour or gas, determine if there is a known odour, taste or irritation threshold.

**For further information on respirator selection go to:**

<http://www.ccohs.ca/oshanswers/prevention/ppe/>

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